

COMMUTE TRIP REDUCTION

Washington State Department of Transportation

Guide to Employee Surveys

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Section

Introduction to the CTR Survey

How to Use this Guide

This guide is a companion resource to *the Commute Trip Reduction (CTR) Task Force Guidelines*. It is intended to assist employers and local governments in conducting employee surveys. If you need additional background information, refer to the *CTR Task Force Guidelines*—copies are available from your local government CTR representative or by contacting the Washington State Department of Transportation (WSDOT) Transportation Demand Management (TDM) office.

This document provides practical advice to affected jurisdictions and employers on how to conduct surveys as efficiently as possible. Each section of the *Guide to Employee Surveys* takes you through the survey process, explaining how the survey is used and identifying important procedural steps.

The appendices contain supplemental information, more detailed explanations, and examples of calculations and forms used in the survey process. If you cannot find an answer to your question in this guide or the *CTR Task Force Guidelines* please contact your local CTR representative, or the WSDOT TDM office. Contacts are listed on page 5 of this guide.

Employee Surveys

Background

Based upon the utility, consistency, and flexibility of employee surveys, the CTR Task Force decided in 1992 to make surveys a key tool in measuring results of the CTR program. Over time, the WSDOT TDM office and the CTR Task Force have made several revisions to the survey form in order to obtain more useful information for employers, local governments, the legislature, and others about the impacts of the CTR program.

The employer's primary responsibility is to distribute and collect the employee questionnaires, and to forward completed questionnaires to their local government for processing. Following processing, survey reports and the processed questionnaires will be sent back to local governments, which will review the information and forward them to employers. The cost of processing all required surveys is paid for by the state.

The Value of Employee Surveys

The basic function of the employee surveys is to measure the commute choices made by employees. Affected employers, the legislature, local governments, the CTR Task Force, and the WSDOT TDM office will all benefit from consistent, accurate, timely, and valid data about the CTR program. Accurate information is needed for use in decision making, resource allocation, program development, evaluation and other purposes.

There are two basic measures of success for the CTR law: vehicle miles traveled (VMT) per employee and single-occupant vehicle (SOV) rate. Surveys of employee commuting patterns are the primary source of information about changes to VMT and SOV. Surveys are the most appropriate tool for this type of measurement because:

- Surveys can identify change caused by CTR programs by measuring employee commuting before employers implement their programs and during each of the measurement years. The data from each measurement year can be compared to the pre-program data to assess changes.
- Surveys can assist in determining cause-and-effect relationships in employers' CTR programs, and can increase understanding about which program elements are most effective.
- Surveys are a valid, reliable and consistent source of information. High
 quality information reflecting actual commute behavior is very important
 because significant decisions will ultimately be based on survey results.
 Please refer to Appendix B, "Uses of the CTR Employee Survey" for
 more information on the uses of the survey.

Accurate results are dependent on the quality of the survey process. Please follow this survey guide and ask for assistance if you are unsure during any step of the survey process.

Other Information Sources

During measurement years, affected employers must provide to their local government either: (1) survey data using the official state-provided survey forms and reporting format established by the CTR Task Force, or (2) equivalent data that meets the requirements outlined in the *CTR Task Force Guidelines*.

Equivalent Data on Employee Commute Patterns

The *CTR Task Force Guidelines* allow employers to substitute "equivalent" data for information collected through the CTR survey. To be considered equivalent and useful for measurement of SOV and VMT reductions, data must provide information on the actual commute mode usage for employees during the measurement week. This information in turn must be linked to employee status and work schedules.

These data characteristics are critical and necessary for calculating worksite SOV and VMT, for identifying what program elements are successful at the worksite, and for supporting the statewide CTR evaluation. The local jurisdiction, in consultation with the WSDOT TDM office, will evaluate the equivalency of any data submitted by an employer in lieu of the state survey. For a detailed description of equivalent data, consult the *CTR Task Force Guidelines*, or contact the WSDOT TDM office or your local CTR representative.

Sampling at Worksites

Affected worksites have the option of using a sample rather than surveying all affected employees or all employees at the worksite. Sampling is an option available to all worksites, though only very large worksites are likely to find sampling easier or less expensive than conducting a full survey.

There are definite advantages to sampling at very large worksites. Employers can devote most of their resources for the survey into getting a good response from fewer people. A statistically valid sample can produce results that are as satisfactory as those achieved by conducting a survey with all employees. However, a statistically valid sample is not always easy to design and implement, and in many cases, may be more expensive than conducting a survey of employees.

For more information on sampling see Appendix C, "Sampling at Worksites."

Who to Call for Help

When you begin the survey process, you may find you need additional assistance. If you are unsure about how to proceed, or if you have special needs, contact your local CTR representative. If you have not had any contact with a CTR representative, call the survey contact person in your county (listed on the following page). They will refer you to your representative.

County	CTR Contact	Phone Number	E-mail
Clark	Patrick Greene	(360) 906-7458	patrickg@c-tran.org
King	Rick Cranford	(206) 263-4790	rick.cranford@metrokc.gov
Kitsap	Bob Ferguson	(360) 478-5864	bob@kitsaptransit.com
Pierce	Debbie Germer	(253) 798-3556	dgermer@co.pierce.wa.gov
Snohomish	Jennifer Hass	(425) 348-7193	jennifer.hass@commtrans.org
Spokane	Aurora Crooks	(509) 477-7540	acrooks@spokanecounty.org
Thurston	Candace Cramer	(360) 459-3609	ccramer@parametrix.com
Whatcom	Susan Horst	(360) 676-6974	susan@wcog.org
Yakima	Gary Pira	(509) 574-1550	pirag@yvcog.org

If you need further assistance, contact T.J. Johnson at the WSDOT TDM office at (360) 705-7508, or via e-mail at johnstj@wsdot.wa.gov.

Section

Conducting Employee Surveys

The WSDOT TDM office strongly recommends that jurisdictions conduct survey workshops for all affected employers. In a short time, local CTR representatives can walk employers through the survey process, stress important procedures, and clearly answer important questions before the process is underway. Staff from the WSDOT TDM office is also available to attend and participate in survey workshops. This extra time taken at the outset may help expedite the survey process and assure good quality survey responses.

Employers affected by the CTR program are responsible for distributing and collecting the questionnaires at their worksite. Below is a list of steps that employers will need to complete during the survey process, followed by more detailed explanations:

- 1. Plan for the survey process. Decide if you will draw a sample. Inform employees that the survey will be conducted and when.
- 2. Decide whether the worksite will survey only those employees affected by CTR, or all employees at the worksite. For more information, see "Deciding Who to Survey" below.
- 3. Request the number of employee questionnaires needed from your local government CTR representative.
- 4. When you receive the questionnaires, please note the number in the rectangular box located in the upper left hand corner of each questionnaire. Worksite survey coordinators may want to use this number to track each form through the survey process.
- 5. Distribute the questionnaires to affected employees or all employees (see "Distributing and Collecting the Questionnaires," page 9).

- 6. Collect and record the codes of returned questionnaires, keeping in mind that a high response rate is important to obtaining accurate information from the survey. For more information on the importance of response rates, see Appendix D, "Survey Response Rate."
- 7. Contact non-respondents and collect as many remaining questionnaires as possible.
- 8. Prepare the completed questionnaires for processing (see Section 4, "Processing the Survey") and send them to your local government.

Deciding Who to Survey

According to the *CTR Task Force Guidelines*, employees are considered affected and are required to be surveyed if they meet all of the following criteria:

- Work 35 or more hours in a week (Monday through Sunday).
- Are scheduled to report to a single worksite between 6 and 9 a.m.
- Work on two or more weekdays (Monday through Friday).
- Work for at least 12 continuous months.

Seasonal agricultural employees and most employees who work rotating shifts are excluded from the count of affected employees. Check your local CTR ordinance for more information.

Worksites are not required to survey affected employees that have been exempted from a worksite's CTR program by the local government.

Affected employees are counted at one location only—their primary worksite. The primary worksite is where the employee is regularly assigned, where the employee has a workstation, or where the employee's supervisor is located.

Employers surveying only affected employees must fully document the process used to identify affected employees, since it bears directly on program eligibility, the survey response rate, and credit for CTR program results.

If employers can definitely exclude some of their employees from the affected group, but are unsure about others, they should exclude those they can and survey the others. All employees who meet, or may meet, the definition of "affected employee" should be surveyed.

Employers have the option of surveying all employees at the worksite if they believe that the commuting characteristics of the total employee population are significantly different than those of the affected employee population. An employer choosing to survey all employees will have the option of using either the calculated VMT rate or SOV rate for all employees or for only affected employees to determine the achievement of program goals in each measurement year.

However, in order to be eligible to determine the achievement of program goals based on all employees, the employer must conduct a baseline survey of all employees at the worksite. Worksites that choose to not conduct a baseline survey, or those that survey only the affected employees in the baseline survey are not eligible to determine the achievement of program goals based on all employees.

If an employer chooses to survey all employees at the worksite, it must survey the total worksite population. This includes ALL of the following groups:

- all CTR-affected employees,
- all other employees on the company payroll (i.e., night shift, part time, and teleworking employees), and
- all persons not on the company payroll but who work at the site and are eligible to take advantage of the benefits of the worksite's CTR program. This may include: contract employees, cafeteria staff, janitorial staff, etc.

Affected employees that have been exempted from a worksite's CTR program by the local government should not be surveyed if the worksite chooses to survey all employees.

Please note that worksites have only two choices of who they survey: (1) only affected employees, or (2) the entire worksite population. Surveying other variations of the worksite population is not an option. For example, a worksite cannot choose to survey the affected employee population plus only non-SOV commuters working outside the affected window.

The jurisdiction and employer should work together prior to the survey time to establish a process to identify the total worksite population. The total worksite population will determine the number of surveys that will be distributed for the survey process if the worksite chooses the option of surveying all employees. This number will also be used to calculate the survey response rate for those worksites choosing to survey all employees. If you need additional information on determining the total worksite population for specific sites, please contact your local jurisdiction or the WSDOT TDM office.

Regardless of whether a worksite surveys affected employees or all employees, the response rate will be calculated as the number of questionnaires returned divided by

the number of questionnaires distributed. It is therefore advantageous for the employer to identify the target survey group as best as possible. This will enable them to plan an effective survey process and maximize response rates.

Distributing and Collecting the Questionnaires

Employers are responsible for the distribution and collection of surveys at their worksites. Employers should choose the method of administration that works best for their organization. Keep in mind that certain techniques are known to be effective in increasing response rates. Unless an organization has a history of achieving high response rates with a one-time distribution of questionnaires, a system should be implemented to allow follow-up and personal contact with each employee as needed.

Each survey form has a unique tracking number printed on it. This number can be used by the ETC or the person administering the survey to monitor which employees or work units within the organization have returned completed survey forms.

Two strategies are presented here for distributing and collecting surveys. Both are designed to help employers get a high response rate. Employers that do not achieve a 70 percent response rate, that have supporting information, and that request that their local government accept their survey, must document that they followed all steps from at least one of the following methods.

For more detailed information on how the survey response rate is calculated see Appendix D, "Survey Response Rate."

Method 1: Group Administration

Questionnaires may be handed out and completed in group settings. This method will work best when all employees (or all employees in a work group) are eligible to fill out questionnaires. This may either be a regular group session, such as staff meetings, or a special group session scheduled to complete the questionnaire.

A tracking system should be set up to show who would normally attend the meeting and who filled out questionnaires. The number of employees filling out questionnaires divided by the number who should have filled out questionnaires, whether or not they attended the meeting, will determine the response rate.

Method 2: Individually Distributed Questionnaires with Follow-up

1. Prior to the survey, inform employees that it will be conducted, when it will be completed, why it will be done, and the importance of responding. This can be accomplished through company newsletters, electronic mail (if available), special mailings, insertions in pay envelopes, or any other established means of communication.

- Send a short cover letter with the questionnaire repeating the purpose and importance of the survey. (Do not staple or clip the cover letter to the survey form.) Give a deadline and specify a method for returning questionnaires.
- 3. The questionnaires can be sent out in an individual mailing, with paychecks, or distributed by supervisors. If sent out with paychecks or other mailing be sure not to bend the survey forms.
- 4. Set up a tracking system to determine which questionnaires have been returned and which have not. Care should be taken to ensure confidentiality.
- 5. Questionnaires can be returned directly to the central company return address, the employee transportation coordinator, departmental return address, or supervisors.
- 6. One week after the questionnaires have been sent out, determine how many have been returned. Normally, response drops off dramatically after one week (assuming that this interval allows adequate time for return).
- 7. If the response rate is below 70 percent after one week, send out one or both of the following to non-respondents:
 - A reminder note about the importance of completing the survey, using the company communication method.
 - A second questionnaire, distributed as in #3 above.

The reminder should tell the person that the questionnaire has not been received and ask for return within two days.

8. One week after the second mailing, if a response rate of 70 percent has not been achieved, individually contact employees who have not returned their questionnaires. If needed, send another questionnaire and give no more than two days to return it.

Response Rate

High Response Rates Lead to Better Information

The CTR Task Force decided to require a minimum response rate of 70 percent in order to promote confidence that the survey results are valid and meaningful.

Therefore, employers are encouraged to get survey response rates as high as possible. Rates of 75 to 100 percent have consistently been achieved at worksites throughout the state, and since the CTR program began, the majority of worksites have consistently achieved at least an 80 percent response rate.

Tips For Achieving a High Response Rate

Based on previous experience with this survey, most employers should be able to achieve the minimum 70 percent response rate. Response from employees is aided by the fact that the survey is short and takes just a few minutes to complete. The procedures outlined in the previous section will also help achieve a high response rate. However, the single most important factor in achieving a high response rate is management commitment to the survey project.

Managers should let employees know why they are being surveyed, why it is important to the employees and the organization, and how the results will be used. This can be conveyed through a personal memo or letter from the CEO that accompanies the survey form. Managers can also speak to groups of employees when the survey is distributed.

Using Incentives

Incentives for returning the survey also can boost response rates. These incentives need not be expensive. Incentives make participation more fun and underscore the importance management places on the survey. Local merchants may be willing to provide these incentives, either donating them outright or providing a discount. Some ideas for incentives include:

- Beverage or food treats
- Transit tickets
- Coupons for discounts on local goods or services
- Small gift items, such as mugs, magnets, T-shirts or hats
- Gift certificates or entry blanks for drawings. Prizes may include transit passes, tickets for entertainment or sporting events, restaurant meals, savings bonds, bicycles or running shoes.

Handling the Questionnaires

The state has tried to reduce the costs of surveying by providing standard questionnaires and centralized processing. The centralized processing system requires the use of forms that can be optically scanned by a machine. These forms are somewhat fragile and require special care. **Consequently, the survey forms should be in**

employees' hands for as short a time as possible. The two most important instructions to remember and to pass along to employees completing the forms are:

- 1. Use a No.2 pencil when completing the form:
 - If employees are not likely to have No. 2 pencils, employers should provide them when distributing the questionnaires
 - If the forms are completed with a pen, the employer is responsible for marking over the answers with a No. 2 pencil, or transferring the information to a new form using a No. 2 pencil.
 - Fill in the bubbles completely, and stay within the bubbles
 - Do not leave stray marks
 - If erasing answers, erase them completely
- 2. Do not damage the forms:
 - Do not staple, clip or tape
 - Do not get wet
 - Do not rubber band
 - Do not bend
 - For shipping, pack securely in oversized manila envelopes or boxes

Use only the state-provided forms. Photocopies cannot be read by the optical scanner.

Do not staple a cover letter to the survey form. If you want to use a cover letter one method that has worked well is to use an 11"x 17" piece of paper folded in half with a cover letter on the front and the survey form placed inside.

Survey Translations for Non-English Speaking and Blind Employees

The WSDOT TDM office has had the employee questionnaire translated into a number of different languages for worksites that have employees who cannot use the standard English version. Currently, surveys are available in the following languages: Cambodian, Chinese, Korean, Laotian, Russian, Spanish, Tagalog and Vietnamese. Braille surveys are also available for employees who are sight impaired. The translated survey forms require special handling and processing. For instructions on how to use the translated surveys, or to obtain specific forms, contact your local jurisdiction or the WSDOT TDM office.

Processing the Survey

When the questionnaire collection process is complete at a worksite, employers should send their official state-provided survey forms in for processing. Section 4 describes the processing procedures in detail including how to use the Employer Identification form.

Employers are not responsible for analyzing their surveys; this service is provided and paid for by the state. Employers that wish to analyze their surveys, or that are interested in how the analysis will be done, should read Section 5, "How the Survey Will Be Analyzed."

Employers should send the completed forms to their local government CTR contact, along with the Employer Identification Sheet. Your local government representative will forward the forms to the state for processing at no cost to the employer. The local government should provide verification to employers that the survey forms were received.

Section

Interpreting the Survey Questions

Some employees may have confusion about how to answer certain questions on the survey. While the survey was designed to apply to most people, situations will occasionally arise that do not seem to "fit." This section describes how each question on the survey form will be interpreted when it is processed and analyzed. Knowing how the questions will be analyzed and applying common sense should help most employees get through the questionnaire. However, if certain parts of the questionnaire are problematic, contact your local government CTR representative for assistance. A copy of the Employee Survey is provided in Appendix E.

Information about the Questions

Questions 1, 2 and 3 are designed to determine which employees completing the questionnaire are actually affected by the CTR law. Clearly identifying affected employees is critical because the goal of the state CTR law is to reduce SOV rates and VMT of affected employees. However, for employers choosing to survey all employees at the worksite, SOV and VMT values will also be calculated for all employees at the worksite, and these values can be used by employers and local jurisdictions to determine progress and goal attainment.

Question 1. Do you usually work 35 or more hours per week for this employer in a position intended to last 12 months or more?

This question is used to determine whether an employee is full-time, as defined in the *CTR Task Force Guidelines*. Only employees who answer "yes" will be potentially affected.

Question 2. Are you scheduled to begin work at your work location between 6 and 9 a.m.?

This question interprets the CTR law on the issue of reducing peak morning commute travel. Only employees who answer "yes" will be potentially affected. In addition:

- Some employees who work rotating shifts do not "usually" arrive between 6 and 9 a.m., and therefore should answer this question "no." Check your local CTR ordinance for more information.
- Employees scheduled to begin work at 6 a.m., but who arrive prior to that time, should answer "yes," and should check the appropriate days on Question 3.

Question 3. Last week, which days were you scheduled to begin work between 6 and 9 a.m.?

Only employees who fill in two or more days (Monday through Friday) on question 3 will be potentially affected.

Note: Only employees who answer "yes" to Questions 1 and 2, and who fill in two or more weekdays in Question 3 will be considered affected. This decision is consistent with the CTR Task Force definition of "affected employees," which means employees who work 35 or more hours per week (Monday through Sunday) and who begin their regular work day between 6 and 9 a.m. on two or more weekdays (Monday through Friday) for at least 12 continuous months.

Question 4a. Last week, what type of transportation did you use each day to commute TO your usual work location?

Question 4 is the "heart" of the survey. Along with Questions 5 and 6, which give credit for compressed work weeks and teleworking, this question is used to determines SOV rate and VMT per employee, and consequently, the impacts of the CTR program. The following instructions are provided on the questionnaire:

- Fill in ONLY ONE type of transportation per day.
- If an employee used more than one type, they should fill in the type used for the LONGEST DISTANCE.
- Fill in "Carpool" only if at least one other person age l6 or older is in the vehicle. For example, driving children to daycare does not count as a carpool.
- If an employee used a ferry for the longest distance, fill in the type of transportation the employee took to the ferry terminal.

- An employee should fill in "teleworked" only if they eliminated a commute trip by working at home, at a telework center, or at a satellite office less than one half as far from home as their usual work location.
- If an employee reported to a different location for this employer, fill in the type of transportation used to get to that location.

Employees should fill in a response for each week day, regardless of their work schedule and days off. Days for which employees give no response are excluded from the SOV and VMT calculations.

Employees should fill in only one response for each week day. The survey does not give respondents the opportunity to report multiple modes used in the commute trip. They must report only one mode per day—the one used for the longest distance. Questionnaires that have more than one mode filled in per day are also factored out of SOV and VMT calculations.

Although calculations are based on Monday through Friday commute modes, an employee who works Saturday or Sunday should fill in the information accordingly.

Walking and bicycling are given extra credit as shown in the table below. (Extra credit is also given for compressed work weeks and teleworking; credit for these options is described under explanations for Questions 5 and 6.) The first column shows the number of days that walking and bicycling were reported on the survey. The second column is the weekly credit for trips eliminated, which includes the extra 20 percent credit required by the *CTR Task Fore Guidelines*.

Credit for Walking and Bicycling to Work

Days/Week	Days/Week
Walk or Bike	Credit
1	1.2
2	2.4
3	3.6
4	4.8
5	6.0

Employers that have changed employee work schedules so that some employees no longer commute to work during the peak morning commute period will be given credit for each employee shifted, provided that: (1) the schedule change was an identified element in an approved CTR program, or (2) the schedule change was initiated as the result of provisions of the state Growth Management Act (RCW 36.70A.010 and related RCWs). For more information on credit for trips shifted

outside of the peak commute period, see "Completing the Employer Identification Form," on page 22.

Question 4b. If you are in a carpool or vanpool, or if you ride a motorcycle, how many people (age 16 or older) are usually in the vehicle, including yourself?

This question will be used in determining the average vehicle trips per person for the calculation of VMT per employee. For instance:

- Carpools of three count as one-third of a vehicle trip per employee
- Vanpools of six or fewer people count as carpools
- Vanpools of seven or more count as zero vehicle trips;
- If two (or more) people ride together on one motorcycle, motorcycles will receive carpool credit.

If Question 4b is left blank, carpools and vanpools will count as two-person car-pools, and motorcycles will count as single-occupant vehicles. For a complete listing of calculation assumptions, see Section 5, "How the Survey will be Analyzed."

Question 4c. Was last week a typical week for commuting?

This question is designed to track, over time, the questionnaire's ability to accurately capture commute mode usage information.

Question 5. Which of the following most fits your normal work schedule?

This question gets information to provide credit for compressed workweeks. It was written to provide a broad range of responses, since so many schedule variations are possible. Only alternative schedules that eliminate a commute trip will receive credit. Typical compressed workweek schedules include:

- Forty hours in four days (with one day off per week)
- Eighty hours in nine days (with one day off every other week)

The following table shows how the credit calculations will be done. The first column shows the number of days reported as worked on the survey. The second column is the weekly average number of days credited. The third column is the weekly credit for trips eliminated which includes the extra 20 percent credit required by the *CTR Task Force Guidelines*.

Credit for Alternative Work Schedules

Days Worked	Trips/Week	Days/Week
	Eliminated	Credit
Five/week	0.0	0.0
Four/week	1.0	1.2
Three/week	2.0	2.4
Seven/two weeks	1.5	1.8
Nine/two weeks	0.5	0.6

Credit for full-time employees who answer "other" will not be included in the calculations done during survey processing. Employers with alternative work schedules not identified on the survey form should provide documentation of these schedules to their local governments when they submit their surveys for processing. This documentation should explain how the schedule qualifies for compressed workweek credit. Local governments may take this information into account when reviewing a worksite's survey results.

Question 6a. On average, do you telework at least one day in two weeks?

This question screens employees for teleworking credit. The definition of teleworking is working for an employer at home or at an office close to home and thereby eliminating a commute trip or reducing the trip by at least half.

Question 6b. How many days did you telecommute in the last two weeks?

This question gives credit for teleworking, when it occurs at least one day every two weeks. The following table shows how the credit calculations will be done. The first column shows the number of days reported as teleworking days on the survey. The second column is the weekly average number of trips eliminated through teleworking. The third column is the weekly credit for trips eliminated, which includes the extra 20 percent credit required by the *CTR Task Fore Guidelines*.

Credit for Teleworking

Days/Two Weeks Teleworked	Trips/Week Eliminated	Days/Week Credit
1	0.5	0.6
2	1.0	1.2
3	1.5	1.8
4	2.0	2.4
5	2.5	3.0
6	3.0	3.6
7	3.5	4.2
8	4.0	4.8
9	4.5	5.4
10	5.0	6.0

Question 7a. Last week did you ride a ferry as part of your commute?

This question is designed to determine the how many employees ride ferries to CTR worksites, to help program evaluators interpret answers to question 4, and to help the ferry system understand the needs of its customers.

Question 7b. Last week did you use a park-and -ride lot as part of your commute?

This question is designed to determine the how many employees use park-and-ride lots as part of their commute, to help program evaluators interpret answers to question 4, and help the state and local agencies plan the expansion of the park-and-ride system to support ridesharing.

Question 7c. One way, how many miles do you commute from home TO your usual work location?

"How far do you live from work?" is the question. Employees should not give round trip or weekly estimates of mileage. This question has multiple uses, including:

- Determining worksite average trip lengths for calculating VMT
- Calculating the impacts of the CTR program on total commute vehicle miles (in the statewide evaluation)

Question 8 What type of job do you do for this employer?

and

Question 9. What is your home zip code?

These are demographic questions intended to:

- Aid employers in designing their programs (knowing the areas that employees are commuting from can make ridematching much easier)
- Provide a check at the state and local level that roughly the same groups of people are responding to the survey over the course of the CTR program
- Be aggregated for evaluation purposes

Question 10. Which of the following would most encourage you to try or to keep using an alternative to driving alone?

Answers to this question will help employers, local governments, the CTR Task Force, the WSDOT TDM office, and others understand the types of programs and incentives that will encourage employees to participate in the CTR program. More specifically, this question identifies distinct program elements that a worksite could implement as part of its CTR program, and is used to derive information about the likely effectiveness of each elements.

Question 11. How likely would you be to try each of the following ways of getting to work?

Answers to this question will help employers, local governments, the CTR Task Force, the WSDOT TDM office, and others identify the modes of transportation that have the most potential for success at each worksite.

Question 12. Last week, how many one-way transit rides did you take on each transit service listed below?

Questions 12 is designed to obtain information about usage on different transit systems. Both bus trips and train trips are considered transit trips in this question. Information from this question is extremely useful to various transit agencies as they evaluate usage of their products and services, and as they attempt to integrate their policies, services, and products to better serve their customers. Employees should report all transit trips made during the survey week, whether for commuting or other reasons.

Note: Question 12 only appears on employee questionnaires administered in counties that have more than one public transit system providing service in the county. These questions do not appear on questionnaires administered in Spokane, Whatcom or Yakima counties.

Section

Processing the Survey

Preparing and Submitting Surveys for Processing

Employer Responsibilities

Once all completed employee surveys are collected at a worksite, they must be prepared and submitted for processing. The employer's responsibilities include:

- 1. Collecting all completed employee surveys. Employers with more than one worksite must keep surveys from each worksite separate.
- 2. Reviewing employee surveys:
 - Pencil over ink-filled bubbles with a No.2 pencil
 - Remove all staples, Post-it notes, paperclips, etc.
 - Remove all unused (blank) survey forms
- 3. Stack employee surveys and orient them consistently (i.e., each survey should be face-up and in the same direction). The top left corner of the survey form has been clipped to aid in this process.
- 4. Complete the employer section of the employer identification form. See "Completing the Employer Identification Form" below. Place the completed identification form on top of the stack of completed employee surveys.
- 5. Package the surveys such that they will remain undamaged and separate from other worksites' surveys. For example, slip the surveys into a reinforced manila envelope (no rubber bands) or into an appropriately sized box. Several worksites' surveys may be placed in the same box as

- long as they are clearly separated. However, do not divide a single worksite's surveys into more than one package.
- Confirm that all surveys from any single worksite are packaged together.
 Once a worksite's surveys have been sent out for processing, no late or loose surveys will be accepted.
- 7. Send, ship or deliver the packaged surveys to the local government CTR representative.

Completing the Employer Identification Form

During survey processing, each worksite's surveys must be identified and kept separate from other worksites' surveys. The employer identification form (or header sheet), a scannable cover sheet developed by the state, is to be used for this purpose. The cover sheet should be completed according to the specifications below. A sample of the employer identification sheet is provided in Appendix F. You must:

- Fill out one employer identification cover sheet for each worksite submitting surveys for processing
- Use a No.2 pencil

Employer Section

Company Name and Branch

This is the employer's name. Employers with more than one worksite submitting surveys should also fill in the branch name (such as the street address or building name).

Contact Person and Phone

This should include the name and phone number of the worksite Employee Transportation Coordinator (ETC) or the person in charge of coordinating the CTR survey process.

Jurisdiction

This is the city in which the worksite is located. If the worksite is outside city/town limits, indicate which unincorporated area it is in.

County

This is the county in which the worksite is located.

Number of Affected Employees

This is the total number of full-time employees scheduled to begin work at the worksite between 6 and 9 a.m. (inclusive) on two or more weekdays for at least twelve continuous months.

Total Number of Employees at Site

This should include all CTR-affected employees, all other employees on the company payroll (i.e., night shift, part time, and teleworking employees), and all other persons not on the company payroll, but who work at the site and are eligible to take advantage of the benefits of the CTR program. This last category may include contract employees, cafeteria staff, janitorial staff, etc. For worksites choosing to survey all employees, the total number of employees at the worksite will be the same as the number of surveys distributed. The total number of employees at the worksite should include any employees who have been exempted from the CTR program by the local government.

Number of Surveys Distributed

This is the total number of surveys distributed. For worksites that survey only the affected employees, the number of surveys distributed should be the same as the number of affected employees at the worksite. Worksites surveying only affected employees are not required to distribute survey forms to affected employees who have been exempted from the CTR program by the local government. For employers that choose to survey all employees, the number of surveys distributed will be the same as the total number of employees at the worksite, minus any employees that have been exempted from the CTR program by the local government. **Right justify the number when filling out the boxes and bubbles** (i.e., if 584 surveys are distributed to employees, express this as "00584"). This section must be completed correctly in order to calculate the survey response rate.

Number of Surveys Returned

This is the number of employees who completed and returned surveys. **Again, right justify the number when filling out the boxes and bubbles** (as explained above).

Date Survey Conducted

This is the date (day/month/year) in which the surveys are completed by the worksite. For example, if the survey was conducted on April 22, 2003, this would be expressed as 04222003.

Survey Type

This section has been added to the worksite identification form to coordinate the many different types of CTR surveys that are being conducted at any given time. The local CTR representative should know where each worksite is in the CTR survey cycle. Please use one of the definitions below to fill in this field. Contact your local

jurisdiction CTR coordinator or the WSDOT CTR office if you need assistance in determining the correct survey type.

Base year—This is usually the first survey conducted at a worksite. It is used to determine the base SOV rate and VMT per person, upon which all future reductions will be based.

Goal 1—This is the survey conducted to determine progress made towards the 15 percent SOV and VMT reduction goals.

Goal 2—This is the survey conducted to determine progress made towards the 20 percent SOV and VMT reduction goals.

Goal 3—This is the survey conducted to determine progress made towards the 25 percent SOV and VMT reduction goals.

Goal 4—This is the survey conducted to determine progress made towards the 35 percent SOV and VMT reduction goals.

Interim 1—This is the first voluntary (non-measurement) survey conducted by the worksite.

Interim 2 though 6—These are the second through sixth voluntary (non-measurement) surveys conducted by the worksite.

Flexpass 1—This is the first survey conducted to measure mode splits for worksites participating in transit agency Flexpass programs

Flexpass 2 though 6—These are the second through sixth surveys conducted to measure mode splits for worksites participating in transit agency Flexpass programs

Other—This is any survey conducted which does not meet one of the definitions above.

Local Government Section

At the top of the government use box are four response bubbles, labeled 01, 02, 03, and 04. These responses are currently not used, and should be left blank.

County

This refers to the two-digit CTR county code. Please contact the WSDOT TDM office if you are unsure of the code for your county.

Jurisdiction

This refers to the three-digit CTR jurisdiction code. Please contact the WSDOT TDM office if you are unsure of the code for your jurisdiction.

Employer ID

This refers to the unique CTR identification number for the worksite. Please contact the WSDOT TDM office if you are unsure of the identification number for a particular worksite.

Employees Shifted Outside the Window

The CTR Task Force Guidelines includes a provision designed to provide credit to worksites that have voluntarily shifted employee schedules so that some or all employees at the worksite are scheduled to arrive at work outside of the 6 to 9 a.m. peak commute period.

In order to receive this credit, the schedule change must have been an identified element in the worksite's approved CTR program, or must have occurred because of impacts associated with the state Growth Management Act.

For each employee whose schedule is changed, a worksite receives credit equal to one-fifth of a trip reduced. The local jurisdiction should complete this section based on the information contained in the worksite's most recently approved *Program Description and Annual Report* form. Contact the WSDOT TDM office for more information on this topic.

Total Employees

Total employees include all CTR-affected employees, all other employees on the company payroll (i.e., night shift, part time, and teleworking employees), and all other persons not on the company payroll but who work at the site and are eligible to take advantage of the benefits of the CTR program. This may include: contract employees, cafeteria staff, janitorial staff, etc. For worksites choosing to survey all employees, the total number of employees at the worksite must be the same as the number of surveys distributed. Affected employees who have been exempted from a worksite's CTR program should be included in the count of total employees.

Exempt Employees

Exempt employees are those who have been officially exempted by the local government from a worksite's CTR program based on criteria contained in the *CTR Task Force Guidelines*.

Section

Section 5: How the Survey Will Be Analyzed

This section discusses the analysis procedures and calculation formulas. It is provided for employers and local governments who wish to understand how the surveys will be analyzed.

The proportion of SOV trips and average VMT per employee will be determined for each affected worksite using data from the survey forms completed by employees at each worksite.

Employers Who Process Their Own Survey

Affected employers are not responsible for analyzing the survey to determine their worksite proportion of SOV trips and VMT per employee. The state has the responsibility for processing and analyzing all required worksite surveys.

An employer may do its own data entry and analysis of the state-provided survey, but it is not required, nor is it encouraged to do so. If an employer does data entry of its surveys, that entry should be done to professional standards, where data entry staff verify at least 20 percent of the surveys by re-entering and checking for errors.

An employer that does data entry and analysis of its own questionnaires is responsible for reporting its results to the local government. In addition, it must provide the raw survey data to the local government for official verification.

Calculating SOV Rate

The SOV rate is the percent of affected employees who are driving alone to work. In technical terms, it is the percentage of potential commute-to-work trips made by employees in single-occupant vehicles (minus extra credit trips).

The *CTR Task Force Guidelines* specify that teleworking, alternative work schedules (that eliminate a commute trip), bicycling and walking, count as zero vehicle trips plus a 20 percent extra credit. In effect, each commute trip eliminated or using non-motorized modes is counted as 1.2 trips eliminated. This assumption applies to both the proportion of SOV trips and VMT per employee. In addition, each employee whose schedule is changed so that he or she is not scheduled to arrive at the worksite during the peak commute period receives a credit of 0.20 trips eliminated, provided the shift was an approved element of the worksite's CTR program or associated with impacts of the state Growth Management Act.

For each employer, the SOV rate will be calculated as follows:

Where:

- "# drive alone responses" equals the total number of weekdays per week that employees reported they drove alone
- "# extra credit responses" equals the total number of days per week on which employees reported that they teleworked, walked, or bicycled to work, or did not work due a compressed work week schedule
- "# of employees shifted from peak" equals the total number of employees whose schedules were shifted so that they no longer commute during the peak period
- "total # potential trips" equals the sum of all potential trips per week for employees that returned surveys. Since the survey is based on a one-week time frame, full-time employees will have five potential trips in most cases. If an employee did not work for any reason, besides a compressed workweek, he or she will have as many potential trips as the number of days worked.

Company Example

Company A has 1,000 employees that returned questionnaires. These employees had 5,000 potential trips in the week they were surveyed. The survey responses indicated that 3,500 commute-to-work trips were made by employees driving alone. There were 100 trips made by walking. The remainder of trips were made by carpools and transit.

SOV = 0.696

Company A's SOV rate is 69.6 percent

Calculating VMT Per Employee

The VMT per employee calculation is more complicated than the calculation for SOV rate. There are two components to the calculation: trips per person and miles per trip.

$$VMT = \underbrace{trips}_{person} X \underbrace{miles}_{trips}$$

"trips" cancel each other out, leaving:

VMT = miles/person

Trips/Person

"Trips/person" is the average number of commute trips made, divided by the total potential trips. Number of commute trips depends on how many occupants rode in the vehicle used. The *CTR Task Force Guidelines* stipulate the following method for counting commute trips in the calculation of VMT per employee:

- Single-occupant vehicle trips count as one trip (includes one-person motorcycle and drive-on ferry trips).
- Carpools count as the inverse of the number of occupants in the vehicle:
 - ⇒ Two-person carpool counts as one-half of a trip per employee
 - ⇒ Three-person carpool counts as one-third of a trip per employee
 - ⇒ Four-person carpool counts as one-fourth of a trip per employee
 - ⇒ Five-person carpool counts as one-fifth of a trip per employee
 - ⇒ Six-person carpool counts as one-sixth of a trip per employee

- Vanpools of seven or more occupants and transit (bus or train) count as zero vehicle trips. Vanpools of less than seven but more than two occupants are counted as carpools (see above).
- Teleworking, alternative work schedules (excluding flex-time), bicycling, and
 walking count as zero vehicle trips plus a 20 percent reduction credit. In
 effect, each commute trip eliminated by using non-motorized modes is
 counted as 1.2 trips eliminated. This assumption applies to both the
 proportion of SOV trips and VMT per employee.
- Each employee whose work schedule is changed so that he or she no longer commutes during the peak period counts as 0.20 trips reduced.

Company Example

Company A has 1,000 employees who returned questionnaires. These employees had 5,000 potential trips in the week they were surveyed. The survey responses indicated that 3,500 commute-to-work trips were made by employees driving alone. There were 100 trips made by walking. Of the remainder, 1,000 trips were made by bus, and 400 trips were made by two-person carpools.

Trips/person = 0.736 trips per person

Miles/Trip

In this calculation, "miles/trip" is the average distance employees live from work. In more technical terms, it is referred to as "trip length." Trip length will be calculated using the average trip length to the worksite, as calculated from the survey (Question 7c).

Most employer programs will not affect the "miles/trip" portion of the VMT per employee equation, since a change in trip length implies that employers are either moving the worksite closer to their employees or employees are moving closer to the worksite. One notable exception is the implementation of telework programs or satellite offices, which can move the worksite closer to employees' homes. But, for the most part, this part of the equation will be a constant number. This means that, by far, the most important component of the VMT per employee calculation is "trips/person."

For evaluation and calibration purposes, actual VMT per employee will be calculated using commute trip length data from the employee surveys.

Putting the Equation Together

Company A's CTR zone average trip length is 10.0 miles. Using Method 1 to calculate trip length:

VMT = 0.736 trips/person X 10.0 miles/trip

VMT = 7.36 miles/person

Summary

The SOV calculation gives credit to employers for moving their employees out of single-occupant vehicles. The formula is neutral in regards to which alternative motorized vehicle modes employees choose. For example, employees in two-person carpools are given the same credit as employees riding the bus. Employees using non-motorized modes, teleworking, or working compressed workweeks receive 20 percent extra credit.

The VMT per employee calculation gives more credit for employees who use higher occupancy modes. Employees in two-person carpools get less credit than employees riding the bus. (As with SOV, the extra credit options still apply.) Both program measures are indicators of how well employers are affecting the commute behavior of their employees.

Section

Interpreting the CTR Survey Report

After a worksite's CTR surveys are analyzed a report will be produced which provides summary results and other useful information derived from the surveys.

The CTR survey report is a 15 page summary of how surveyed employees answered the CTR questionnaire, the resulting single-occupant vehicle (SOV) rates, and vehicle miles traveled (VMT) per employee values. The survey report presents these values for two employee groups: (1) employees identified as affected employees (based on the first three survey questions); and (2) all employees who completed the survey. The data from each group are analyzed using the same calculation formulas and reported in the same format.

Data from the affected employee group was used to determine CTR zone base year values in Spokane, Thurston and Yakima counties in 1992, and in Whatcom County in 1996, and will be used by the CTR Task Force and the WSDOT CTR office to measure progress toward goals in all affected counties in the required measurement years.

Data from the second group, all employees surveyed, can be used to determine progress and goal attainment provided that the worksite surveyed all employees at the worksite as described in "Deciding Who to Survey," page 7. If the worksite did not meet the criteria identified for surveying all employees, then the survey results for all employees can be used by the worksite and jurisdiction for program planning purposes, but will not be used to determine progress towards the applicable SOV or VMT goal.

Page One

The first page of the survey report is designed as an executive summary, and provides general information about the worksite's survey results. This page may be useful for

sharing information about the impacts of a worksite's CTR program with employees and managers at the worksite.

The upper right hand corner of page one contains information about the worksite, the type of survey conducted, and the month and year the survey was conducted. For worksites that make either the SOV or VMT goal, a message will appear in this area congratulating the worksite on its success.

The middle of the page contains more specific information about the employees completing the survey and the worksite's SOV and VMT results. The box labeled "Employee and Survey Response Information" identifies the total number of employees at the worksite (as reported by the local jurisdiction on the employer identification form), the estimated number of affected employees at the worksite (based on the answers to questions one, two and three of the survey), the number of surveys distributed, the number of surveys returned, and the response rate. It also identifies whether the worksite met the criteria for surveying all employees and is eligible to use results for all employees to determine achievement of the SOV and VMT goals, and whether the response rate was low enough to require fill-in.

On the left hand side of the middle of page one is information about whether the worksite made either the applicable SOV or VMT goal. Also provided is information on changes in the worksite's SOV and VMT rates since the last survey and since the worksite's baseline survey. The information on SOV and VMT changes is reported for affected employees only, even if the worksite surveyed all employees.

At the bottom of page one is summary survey information for the worksite. It includes information on both SOV and VMT rates for affected employees and for all employees completing questionnaires. This information includes the baseline (or "starting point" for the worksite), the current goal, the survey results, and the survey results with fill-in. For worksites that did not achieve at least a 70 percent response rate the SOV rate and VMT per employee will be higher with fill-in. For worksites that achieved at least a 70 percent response rate, the SOV and VMT results with fill-in will be the same as the results without fill-in. For more information on response rates and fill-in, see Appendix D, "Survey Response Rate."

The survey summary table also indicates whether the worksite met the SOV or VMT goal for affected employees or all employees, and the next goals for each group at the worksite.

Page Two

The second page of the survey report provides more detailed information about the number and percentage of employees using various commute modes at the worksite. The information includes the number of trips taken by employees using each mode during the survey week, the percentage of trips taken, the number of employees using each mode at least once during the survey week, and the percentage of employees using each mode. This information is provided for both affected employees and all employees completing the questionnaire.

Page Three

Page three displays a complete history of all CTR surveys taken by the worksite over the course of the worksite's participation in the CTR program. The survey history table lists the worksite and zone baselines, identifies the measured SOV and VMT rates for affected employees and all employees in each of the measurement years, the SOV and VMT reductions since the worksite first implemented a CTR program, and the SOV and VMT reductions since the last survey taken by the worksite. It also identifies whether the worksite met a CTR goal in each of the survey years, and lists the worksite and zone goals for the worksite.

Page Four

Page four provides additional information about the use of commute alternatives at the worksite. It identifies the frequency of telework and the number of employees participating in telework. It provides data on the number of employees using alternative commute modes and participating in ridesharing, including occupancy. It also contains information on the number and percentage of employees that have alternative work schedules.

The bottom of the page identifies the number of employees who rode a ferry and used a park and ride lot, the average commute distance to the worksite, the number of employees that have been exempted from the CTR program, and the number of employees whose start times were shifted outside of the peak commute period.

Pages Five Through Thirteen

Pages five through thirteen provide detailed information about employees using various modes of transportation at the worksite. If the worksite surveyed all employees, then these pages reflect the results for all employees. If the worksite surveyed only its affected employees, the results are for affected employees only. Information is included for the following groups of employees:

- Employees who drove alone to work five days per week
- Employees who drove alone to work three or four days per week
- Employees who used transit to commute to work at least three times per week
- Employees who used rail to commute to work at least three times per week
- Employees who carpooled to work at least three times per week
- Employees who vanpooled to work at least three times per week
- Employees who used non-motorized commute modes to get to work at least three times per week
- Employees who reported using other modes at least three times per week
- Employees who commuted to work in non-SOV modes at least three times per week

For each group of employees identified above, the survey report identifies work schedules, one-way commute distances, occupations, and home zip codes. Information is also provided about the likelihood of using various commute modes, and the incentives that would encourage this group of employees to use alternative commute modes. This information can be extremely useful to employers and local governments to help them understand the types of employees using various commute modes, the commute modes which have the greatest likelihood of success at the worksite, and the program elements which would be most successful in encouraging employees to participate in the worksite's CTR program.

Pages Fourteen and Fifteen

Page fourteen provides information about affected employees who made transit trips during the survey week. Information on this page includes the number of total commute trips taken on transit and the number of employees using transit at least once during the survey week. Transit information is categorized by the transit system on which the trip occurred. Page fifteen contains the same information for all employees at the worksite.

Pages fourteen and fifteen are not provided for worksites located in Whatcom, Spokane, and Yakima counties, which have only one transit system providing service in the county.

Using the Survey Report

The information contained in the survey report can be a very effective tool in helping employers and local governments understand the impacts of a worksite's CTR program, and the specific strategies and program elements that have the greatest likelihood of being successful. This in turn allows employers and local governments to make cost effective decisions about the best way to allocate resources to support the program.



Selected Definitions and Abbreviations

Several terms that are used in this guide have specific meanings, which are fully defined in the *CTR Task Force Guidelines*. A few key definitions are listed here:

Affected Employee

A full-time employee who begins his or her regular work day at a single worksite between 6 and 9 a.m. (inclusive) on two or more weekdays for at least 12 continuous months. The employee will only be counted at his or her primary worksite. Seasonal agricultural employees are excluded.

Alternative Mode

Any means of commute transportation other than that in which the single-occupant motor vehicle is the dominant mode, including teleworking and compressed work weeks if they reduce commute trips.

Base Year

The period from Jan. 1, 1992, through Dec. 31, 1992, on which goals for vehicle miles traveled and single-occupant vehicle trips shall be based. For worksites which joined the CTR program after 1992, the base year is either 1992 or the year in which the worksite conducted a baseline survey (if applicable).

CTR

Commute Trip Reduction

Dominant Mode

The mode of travel used for the greatest distance of a commute trip.

ETC

Employee Transportation Coordinator

Mode

The means of transportation used by employees, such as single-occupant motor vehicle, rideshare vehicle (carpool, vanpool), transit, ferry, bicycle, and walking.

Proportion of SOV Trips

The number of commute trips over a set period made by affected employees in singleoccupant vehicles divided by the number of affected employees working during that period.

RTPO

Regional Transportation Planning Organization

SOV

Single-Occupant Vehicle

TDM

Transportation Demand Management

VMT

Vehicle Miles Traveled

VMT Per Employee

The sum of the individual motor vehicle commute trip lengths in miles made by affected employees over a set period divided by the number of affected employees during that period.

Worksite

A building or group of buildings on physically contiguous parcels of land or on parcels separated solely by private or public roadways or rights-of-way occupied by one or more affected employers.

WSDOT

Washington State Department of Transportation



Uses of the CTR Employee Survey

The survey of employee commuting behavior is used for multiple purposes, several of which are listed below. If you would like more information, Chapter 2 of the *CTR Task Fore Guidelines* discusses each of these purposes in detail.

- 1. To establish a baseline measure of employee commuting habits for use by employers in designing their CTR programs.

 Most employers want to maximize the impact of their CTR programs while minimizing the cost. The best way to start a CTR program is to understand how employees are currently commuting to work and what might motivate them to use alternative modes of travel. Employers who want to design cost-effective CTR programs should survey their employees before submitting their initial CTR program descriptions. Some local ordinances require employers to conduct a baseline survey within 12 months of becoming affected by the CTR law. Please consult your local CTR ordinances for specific requirements in your jurisdiction.
- 2. To give credit for transportation demand management (TDM) programs existing prior to the base year. Employers with successful TDM programs implemented prior to the time they became affected by the CTR law may be eligible to apply for program exemption credit, which exempts them from most program requirements. Check your local CTR ordinance for more information.

The *CTR Task Force Guidelines* allow employers with prior programs to apply for the program exemption credit within 90 days of becoming affected by a local CTR ordinance. If the worksite measurement values (VMT per employee or proportion of SOV trips) are at least 12 percent lower than the base year zone values, the employer will be considered to have met the first CTR goal.

Employers may request program exemption credit each year after base year, and it will be granted as long as the worksite measurement values are lower than the next set of target CTR zone goals for that worksite.

3. **To establish site-specific base year values for employers.** The *CTR Task Force Guidelines* allow employers the option of basing SOV and VMT goal reductions on either the zone base year value or on the worksite's own site-specific base year value, as determined through the CTR survey.

The base year CTR zone values are averages: some employers' rates will be lower than the average, and some will be higher. Thus, it is in an employer's best interest to conduct a baseline survey to determine their own, actual starting point prior to implementing a worksite CTR program.

- 4. **To measure progress toward goals in the required measurement years.** In the goal years, the proportion of SOV trips and VMT per employee values for each affected employer will be determined using data from a survey of employees about their commute mode choice. If an affected employer has equivalent information collected within 12 months of the measurement period, such information may be submitted by the employer in lieu of survey data. For specific information on equivalent information, consult the *CTR Task Force Guidelines*.
- 5. **To evaluate the costs and benefits to employers and the public of the CTR program, and to assess the effectiveness of the program.**The CTR Task Force is responsible for evaluating the CTR Law. It must make a report to the Washington State Legislature every two years through 2005. The report must include recommendations on whether the program should be continued, modified, or terminated.

Specifically, the CTR Task Force must: (1) review progress toward the law's implementation; (2) evaluate the costs and benefits of the law; (3) consider the costs of not having implemented the law; and (4) evamine other TDM programs nationally and incorporate its findings into

(4) examine other TDM programs nationally and incorporate its findings into its recommendations to the Legislature, as required by the CTR Law.

The CTR Task Force and Legislature will base major decisions on the evaluation results, so it is important that the information be of good quality. Employers will be interested in the evaluation results as well, since they bear a large part of the responsibility of this program, and will need information about the most cost-effective TDM strategies for their particular situations.

The state will obtain and analyze survey information from all employers doing





Sampling at Worksites

In the CTR program, employers have the option of using a sample rather than surveying all of the affected employees or all of the employees at the worksite.

Sampling is the process of taking a portion of a population and using statistical methods to ensure that it is representative of the entire population. Validated, statistical procedures must be used to ensure that the sample represents the population adequately. These procedures provide confidence that conclusions drawn about the population are valid. At large worksites, where the cost to measure all individuals is high, sampling may be a cost-effective research method to use. At smaller worksites, the costs of drawing a representative sample often exceed the savings from surveying fewer people.

Guidelines for Sampling

The *CTR Task Fore Guidelines* require that samples be random; stratification must be done to ensure that all major work groups are represented in the sample. The employer must demonstrate to the local jurisdiction that the sampling method is in accordance with generally accepted research sampling methods, and must get approval before actually drawing its sample of employees. The WSDOT TDM office will assist local governments in determining the acceptability of the sampling method.

The sampling method used at a specific worksite must be developed by qualified professionals with expertise in sampling techniques. Employers have three options:

- Use a professional survey firm to draw the sample
- Use a public agency with staff that has demonstrated expertise in sampling techniques
- Use its own staff, with demonstrated expertise in sampling techniques

When Should an Employer Consider Sampling?

Sampling will be appropriate if three conditions are met at the worksite:

- 1. The employer's total survey cost with a sample is less than their total survey cost with a census. There may be substantial cost involved in designing, drawing and administering a sample. The cost savings from surveying fewer employees must outweigh the sampling cost in order for sampling to be cost-effective.
- 2. All affected employees, or all employees at the worksite, can be identified.
- 3. Mechanisms are in place, or can be developed, to assure that the questionnaires reach the employees in the sample. This could include such approaches as directly mailing survey forms to the sampled individuals through company mail (without bending), distribution through supervisors to the sampled individuals, inclusion in pay envelopes, or desktop distribution.

What is a Random Sample?

The definition of a random sample is one in which each person in the population has a known chance of falling into the sample. A simple random sample is one in which each person in the population has an equal chance of falling into the sample. A stratified random sample is one in which persons in different sections of the population have known, but different, probabilities of falling into the sample. With stratified samples, the final results must be weighted statistically to reflect the total population.

The key goal of random samples is to create unbiased results that can be generalized with confidence to the entire population of affected employees at a worksite. Without a random sample, an employer's survey will not produce results that can be generalized to the organization as a whole. Examples of methods that are not statistically random are handing out questionnaires to people who happen to be in the cafeteria on a given day or to "10 in each division." Neither case would provide a known probability of selection for each employee.

Recommended Sampling Procedure

In order to derive an unbiased sample of employees at your worksite, you will need the following items before you begin to design your sample:

- Database listing of all eligible employees
- Method of identifying employees
- Random number table

To develop a worksite sampling plan, follow the steps below:

- 1. **Generate a database listing of eligible employees.** The key to a successful random sample is ensuring that each eligible employee has an equal chance of being in the sample. The first step is to generate a database listing of eligible employees.. This must be a single database, including all eligible employees at all levels and in all departments that have any eligible employees. The database should be in a form that does not introduce any systematic structure on types of employees or types of jobs. Databases that lack systematic bias, and are appropriate to use, include:
 - Alphabetical databases
 - Databases organized by social security number
 - Randomized databases
- 2. **Determine the sample size needed.** The second step is to determine the sample size needed, based on the number of eligible employees at the worksite. The size of the sample varies with the size of the eligible work force. If an employer chooses to sample, the following table must be used to determine the sample size. If the number of affected employees falls between the numbers given in the table, you may interpolate to get the appropriate sample size for your worksite.

Sample Sizes by Number of Eligible Employees

Number of

Eligible Employees	Sample Size
100	97
200	188
300	273
400	354
500	430
1,000	550
2,000	650
3,500	700

5,000	720
10,000	730
20,000	740

3. Calculate the interval needed. The simplest way to draw a random sample is to determine an interval and take every "nth" employee from an employee database of eligible employees. To determine the interval, divide the number of eligible employees by the sample size. That ratio will always be greater than one. It will be a smaller number if the number of eligible employees is under 1,000, and can be quite large if the number of eligible employees is very large. The employer should round the ratio to the nearest integer in determining the interval. It is better to round down, since this will create a slightly larger sample size than is required.

Next, using a table of random numbers, determine a start point between one and the interval number ("n"). Select the employee reached by counting from the beginning of the data base to the start point. Then sample every "nth" employee, continuing from the first employee sampled.

Example:

- Company A has 2,000 eligible employees. Based on Table 1, the appropriate sample size is 650
- (the interval) = 2,000/650 = 3.08
- The number "2" is randomly chosen as a starting point

Company A should start at the second name on its database list of eligible employees and draw every third name or number off the list.

For worksites with 1,000 or fewer employees, the sample needs to include over half of the eligible employees. For these worksites, this procedure should be used to choose employees to <u>exclude</u> from the sample.

After the sampling strategy has been determined, but before the actual sampling has been drawn, the employer must contact its local government CTR representative and get approval for its sampling plan. In most cases, the procedure outlined above will suffice. In more unusual or difficult circumstances, the procedures presented in this section may not apply.

When a Single List is Not Available

If the employee database cannot be put into one of these forms (for instance, if the employer has only a series of separate data bases organized by department), a random sample can be drawn using the following procedure:

- 1. Divide the total number of eligible employees by the sample size for the total organization to determine an interval.
- 2. Divide each separate data base of eligible employees by the total number of eligible employees. This shows how many employees should be sampled in each separate database.
- 3. Using separate random start points from a table of random numbers, sample within each segment following the procedures above for a simple random sample.
 - If there are several small departments that would not be included using this method, they should be combined into one and treated as a single department.
- 4. Submit your sampling plan to the local jurisdiction.

There are methods that could provide a random sample other than use of employee databases, but they require complex procedures and controls that would normally make them more expensive than conducting a census of eligible employees. Because variation would be great and each method would be company-specific, other methods are not discussed here. There are sampling statisticians in the private sector and at most universities who could work with an employer to determine appropriate procedures. Any alternate procedure should get prior approval from the local government, even if the employer is working with professional researchers.

The CTR Task Force recommends contacting the WSDOT TDM office to determine the validity of the survey sampling procedure.



Survey Response Rate

In simplest terms, the survey response rate is the percentage of the surveyed employee population who complete and return questionnaires. The target minimum response rate for the CTR survey is 70 percent: it is in the employer's best interest to get completed questionnaires from at least 70 percent of the employees it chooses to survey.

The response rate is calculated as the number of completed questionnaires divided by the total number of surveys distributed. Blank questionnaires are not counted when calculating the response rate.

Response Rates for Samples

If a worksite chooses to sample either its affected employees or all employees at the worksite, it must achieve a 100 percent response rate. For example, if a worksite has 1,000 employees, the minimum sample size is 550 employees. Thus, it needs to receive at least 550 completed response forms for the sample to be considered legitimate.

Survey Non-Response

Non-response is the number of employees who received a survey form and did not complete it divided by the total number of survey forms distributed. Employees who are ill, on vacation, or who do not complete a questionnaire for any other reason are included in the non-response.

For survey results to be valid, the survey response must be high, and the non-response must be low. This is especially important when measuring changes over time. If nonresponse is high, surveys done in measurement years could mask changes that, in fact, have occurred, or could show changes when no changes have occurred.

If An Employer Does Not Reach 70 Percent

Because some employers may have difficulty achieving the target minimum response, there are acceptable alternatives if they do not achieve a 70 percent response rate:

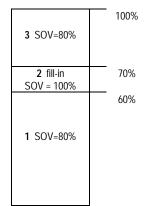
- 1. An employer who demonstrates that it has followed the steps in this Guide for maximizing response rate and who has "supporting" information may request that the local government accept its survey as valid; or
- 2. Employers may choose to designate all non-response below 70 percent of the affected employee population/sample as SOV trips; or
- 1. A combination of options 1 and 2 above, negotiated between the employer and local government.

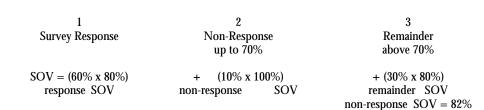
Commute modes of non-respondents between 70 percent and 100 percent of the affected employee population/sample will be distributed proportionally based on the employees who completed the survey.

Company Example

Example Company Z

For example, company Z does a survey and achieves a 60 percent response rate. The survey results show an SOV rate of 80 percent. The calculated SOV rate with the fill-in is:





When a worksite does not achieve the targeted 70 percent response rate, a similar fill-in for non-respondents will be factored into the worksite's VMT calculations.

For analysis and reporting purposes, the CTR Task Force and the WSDOT TDM office will use SOV and VMT rates for each worksite which reflect SOV fill in for any response rate less than 70 percent.

Achieving a High Response Rate

The most important factor in achieving a high response rate is management commitment. If managers and supervisors know this is expected, they will be more likely to structure situations that will encourage response. If employees know their participation is expected, they will be more likely to complete the questionnaire.

In addition to recognizing the importance of management commitment, the CTR Task Force approved a survey process that removes most major impediments to achieving high response rates. Other factors leading to high response rates include:

- The questionnaire is short—most employees will be able to complete it in less than five minutes.
- The state is providing technical support, including this document and is working with local jurisdictions to provide training for worksite employee transportation coordinators or others who will administer surveys at the worksite.
- The state is leveraging survey costs by paying for the design, printing, processing, and reporting of survey results. Employers do not need to devote any resources to these aspects of the survey and can instead concentrate on achieving a high response rate.
- Employers may sample their employees, saving on efforts to distribute and collect questionnaires.
- Employers who do not meet the target minimum response rate may use supporting information, if their local governments accept it.

With a high response rate, employers can demonstrate good results with valid information, and can avoid the fill-in of SOV trips for a response rate below 70 percent.



Sample Employee Questionnaire

State of Washington

Fall, 2002 - Summer, 2004

Employee Questionnaire

MARKING DIRECTIONS

· Use a No. 2 pencil

CORRECT MARK

· Fill in the circle completely.

0000

• Erase cleanly any marks you wish to change. INCORRECT MARKS

· Do not make any stray marks on this form.

Q 8 0 0

557014

ALL QUESTIONS REFER TO WORK FOR THIS EMPLOYER ONLY.

OT	es					01	lo						
Are	you s	chedu	iled to	begi	n worl	c at yo	our work loca	tion between	6 and 9 a.n	n.? 🔘	Yes	No	
Last	week	, whi	ch day	s wer	e you	sche	duled to begin	n work betwe	en 6 and 9	a.m.? (Ma	ark all that app	ly.)	
ON	londa	V				0 V	Vednesday		O Frida	av		O Sun	day
	uesda					1000	hursday		O Satu			O Non	
Last	t weel	k, wha	at type	of tra	anspo	rtatio	n did you use	each day to	commute T	O your us	sual work loca	ation?	
• Fi	II in O	NLY (ONE ty	pe of	transp	ortatio	n per day.						
							the type used	for the LONG	EST DISTAI	VCE.			
							er person age						
											Center or at a	Satellite Office	ce
							your usual w						
									portation vol	took to t	he ferry termi	inal.	
			,		3		M	8.0					
M	T	W	Th	F	Sa	Su				4h	If you are in a	a carnool or	vannool
(M)	(T)	(W)	Th	(F)	Sa	Su	Drove alone	(or with childr	en under 16	-	or if you ride		
M	(T)	(W)	(Th)	F	Sa	Su		or more peo			many people		
M	T	(W)	(Th)	F	Sa	Su	Vanpooled				usually in the	vehicle, inc	cluding
(M)	T	(W)	(Th)	(F)	Sa	Su	Motorcycle/N	Moned			yourself?		
M	T	(W)	(Th)	F	Sa	Su	Took the bus				One perso	n Os	even peopl
(M)	T	W	(Th)	(F)	Sa	Su	Rode the tra				O Two peopl		ight people
(M)	T	(W)	(Th)	F	Sa	Su	Rode a bicyc				O Three peo		ine people
(M)	(T)	(W)	(fh)	F	Sa	Su	Walked				O Four peop		en people
(M)	(T)	(W)	(Th)	(F)	Sa	Su	Teleworked				O Five peopl		leven or
(M)	(T)	(W)	(Th)	(F)	Sa	Su	Compressed	workweek da	av off		O Six people		more peopl
(M)	(T)	(W)	(Th)	(F)	Sa	Su	Overnight bu		3				
(M)	(T)	(W)	(Th)	(F)	Sa	Su	Control of the Contro	(day off, sick,	etc.)	4c.	Was last weel	k a typical w	reek for
M	T	(W)	Th	F	Sa	Su	Other:	Account to the months of			commuting?		
											O Yes	O No	
Whic	h of t	he fo	llowin	g mos	st fits	05	days a week		4 days a w	eek (4/10:	s) 3 days	a week	
your	norm	nal wo	ork scl	hedul	9?		days in 2 wee				Other:		
On a	verag	e, do	you to	elewo	rk at l	east o	ne day in two	weeks? Ma	rk "yes" if yo	u work at	home or at a	Telework Cel	nter
or Sa	atellite	Office	e less	than c	ne-ha	If as fa	ar from home a	as your usual	work location	7.			
ON	lo (go	to qu	estion	7a on	the of	her sid	de)						
			. How					O no days	1 day	O 2 day	s 3 days	O 4 days	O 5 days
							o weeks?				s 08 days		
								tinued on F	1000		- Card 15		

	erry as	s part	of you	ur con	10. Which of the following would most encourage you to try or to keep using an alternative to driving alone? Mark the three most important to you.						
7b. Last week did you use a p commute? No Yes	oark-an	ıd-ride	e lot a	s part	 a. An employer-provided car for work purposes during work hours b. Transportation during lunch or breaks for 						
O NO O les					personal errands						
ONE WAY, how many mile TO your usual work locate DO NOT use roundtrip or distance. Include miles for errands of made daily on the way to Round off the distance trate to the nearest mile. Write numbers in the boxe in the corresponding circle. The example is for an errowho lives 8 miles from who lives 8 miles from wh	weekly or stops o work. veled os and file eles. oployee ork. s one w	his em	1 2 3 5 6 7 8 9 mploye	0 1 2 1 1 5 6 7 9 9 arketir r Servi	0 0 1 1 2 2 3 3 4 4 6 6 6 7 7 8 8 9 9	c. An immemerge d. A more carpool e. A finantian alter f. A finantian var h. Person i. Secure j. Lockers k. On-site center I. On-site m. Person n. More fr	rediate ride ency (guara flexible works, vanpools cial incentive to drain the cial subsidy reserved, appools alized help drain the control of the service alized help equent bus formation a unity to worked security paces at pa	nteed ride hon the schedule to the bus, etce (allowance iving alone for giving upor discounted forming a caparking for years for walke banking, dry vices ee or kitchen finding bus to service at the bout communication of the park-and-ivide at park-and-ivide service at the serv	ome) oo meet c. o'subsidy) fo o your parki d parking fo or pool or var our bicycle rs and bicycle rs and bicycle ris and ro oe worksite ate alternati elework) ride lots	ing space or carpool inpool clists tness	
9. What is your home zip code? (Write numbers			1==			11. How likely wo	uld you be	to try the fe	ollowing w	ays of	
in the boxes and fill in	0	0	0	0	0	getting to wo	rk? do		not	not a	
	1	1	1	1	1		now	likely	likely	optio	
corresponding circles.)	(2)	2	2	2	2	carpool	0	0	0	0	
corresponding circles.)			(3)	(3)	(3)						
corresponding circles.)	3	3				vanpool	0		0	0	
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(ing County	Sound	Community	Pierce	Kitsap	Intercity	Everett	Island	Skagit	Other
Metro	Transit	Transit	Transit	Transit	Transit	Transit	Transit	Transit	
00,110,20,33,44,55,66,66,77,88	00011223344556677888	0 0 1 1 2 2 3 3 4 4 5 5 6 6 7 7 8 8	0 0 1 1 2 3 3 4 4 5 5 6 6 7 7 8 8	0 0 1 1 2 3 3 4 4 5 6 6 7 7 8 8	00011223344556667788	0001102233344455666777888	0 0 1 1 2 2 3 3 4 4 5 5 6 6 7 7 8 8	0 0 1 1 2 2 3 3 4 4 5 5 6 6 7 7 8 8	0 0 1 1 2 2 3 3 4 4 5 5 6 6 7 7 8 8

Appendix

Sample Employer Identification Sheet

Commute Trip Reduction

State of Washington

Fall, 2002 - Summer, 2004

Commute Trip Reduction Program Employer Identification

MARKING DIRECTIONS

- · Use a No. 2 pencil
- Fill bubbles darkly and completely.
- Erase cleanly any marks you wish to change. INCORRECT MARKS

CORRECT MARK

Jurisdiction:Cot Number of Affected Employees: Total Number of Employees at Site:		
Branch: Contact Person: Durisdiction: Cot Number of Affected Employees: Cotal Number of Employees at Site:	unty:	
Contact Person: Durisdiction: Number of Affected Employees: Total Number of Employees at Site:	unty:	
lumber of Affected Employees:	unty:	
lumber of Affected Employees: otal Number of Employees at Site:		
otal Number of Employees at Site:		
Number of Number of Data Commit		(.4)
Number of Number of Date Survey Surveys Distributed Surveys Returned Conducted	Survey Type	
	○ Base year ○ Interim 1	O Flexpass 1
	Goal 1 Interim 2	O Flexpass 2
	Goal 2 Interim 3	O Flexpass 3
	○ Goal 3	O Flexpass 4
6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	Goal 4 Interim 5	○ Flexpass 5
8 8 <td>O Interim 6</td> <td>O Flexpass 6</td>	O Interim 6	O Flexpass 6
		Other
For Local Government Use Only:		
01 02 03 04		
County Jurisdiction Employer ID Cutside Wi		Exempt Employees
This worksite surveyed all 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		00000
	1 1 1 1 1 2 2 2 2 2 2	1 1 1 1 1 2 2 2 2 2
Yes 3333 3333 3333	3 3 3 3 3 3	3 3 3 3
	4 4 4 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	4 4 4 4 4 5 5 5 5 5 5
66 666 666	6 6 6 6 6	66666
	77 777	77777
	8 8 8 8 8 8 9 9 9 9 9 9 9	88888



Sample Survey Report